

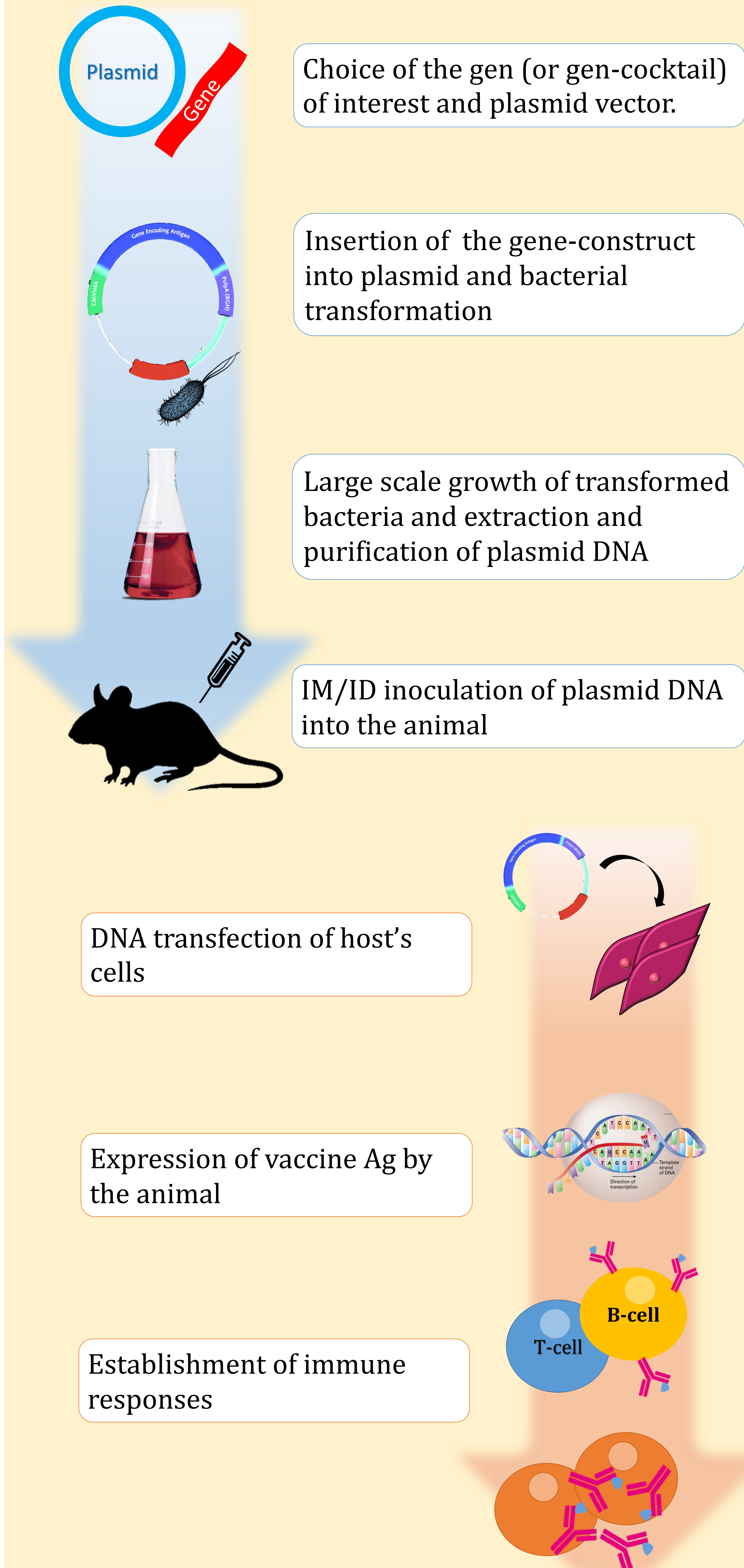
DNA vaccines applied in veterinary

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INTRODUCTION

The aim of this review is to summarize some of the articles focused in the application of DNA vaccines in the veterinary field.

DNA Vaccines: Production and Mechanism of Action



LICENCED DNA VACCINES

Infectious Hematopoietic Necrosis Virus (IHNV)

- 1996 first DNA vaccination against IHNV in rainbow trout.
- Licensed in 2005.
- Recently used in Atlantic salmon in Canada.

West Nile virus (WNV)

- West-Nile innovator
- Approved in 2005
- Currently discontinued by Pfizer

Melanoma immunotherapeutic vaccine in dogs

- Approved in 2007; licensed in 2010

RECENT DEVELOPMENTS

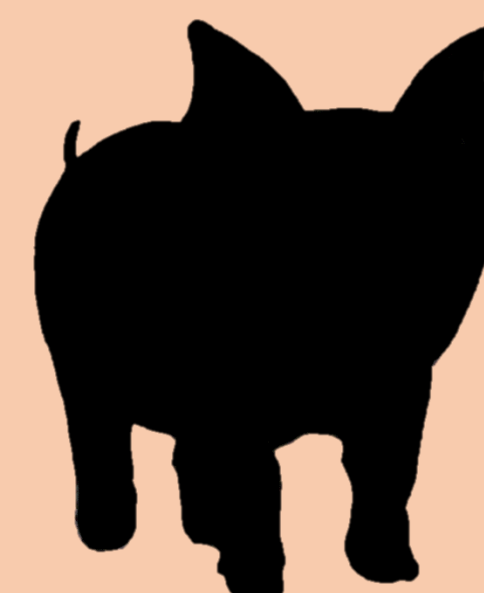
Fish



Viral Haemorrhagic Septicaemia Virus (VHSV)

DNA vaccines specially effective against Norhabdoviruses.

Swine



Porcine Reproductive and Respiratory Syndrome Virus (PRRSV)

Good efficacy on mice, problems when scaling to pig.

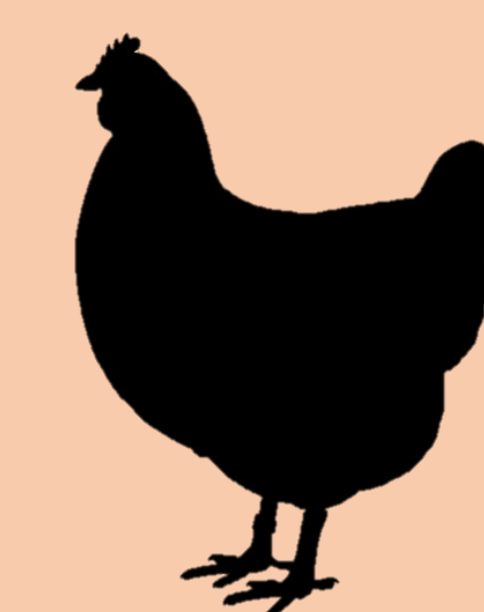
African Swine Fever Virus (ASFV)

Promising results: For the first time partial protection against lethal challenge afforded.

Swine Influenza Virus (SIV)

High potential of progress but protection not totally complete. Expecting better results with adjuvants in future studies.

Poultry



Infectious Bursal Disease Virus (IBDV)

Good prospect of DNA vaccine against IBDV. Minimal bursal atrophy and immunosuppression.

Newcastle Disease Virus

Protection of only 50%. Authors suggest the use of adjuvants to increase it.

Avian Influenza Virus

Against H7N7 or H5N1 with favourable producing immune response.

CONCLUSIONS

- DNA vaccine research is advancing.
- Existence of variability in results in different species.
- Gun-delivery system increase effectiveness
- In the near future: new licenced DNA vaccines.